

What is claimed is:

1. An object taking out apparatus for taking out a plurality of objects one by one, comprising:

image capturing means for capturing an image of the plurality of objects;

storing means for storing information on a whole feature representing a whole shape of the object, information on partial features representing one or more partial shapes of the object, and information on partial feature detecting regions defined for detection of the partial features of the object;

object detecting means for determining positions/orientations of images of the respective objects in the image of the plurality of objects captured by said image capturing means using the information on the whole feature of the object stored in said storing means;

partial feature detecting region setting means for setting partial feature detecting regions for the images of the respective objects based on the positions/orientations of the respective objects determined by said object detecting means and the information on the partial feature detecting regions stored in said storing means;

partial feature detecting means for detecting the partial features of the objects in the set respective partial feature detecting regions using the information of the partial features stored in the storing means;

priority determining means for determining priority of taking out the object based on evaluation of detection of the partial features of the objects by said partial feature detecting means; and

a robot for successively taking out the objects according to the priority determined by said priority determining means.

2. An object taking out apparatus according to claim 1, wherein said priority determining means evaluates the result of detection of the partial features of the object by the number of successes in detecting the partial

features and determines the priority of taking out the object based on the number of successes.

3. An object taking out apparatus according to claim 1, wherein said priority determining means evaluates the result of detection of the partial features of the object using a matching index representing a degree of matching of a partial image of the object and the corresponding partial feature in the partial feature detecting region, and determines the priority of taking out the object based on the sum of the machining indexes.

4. An object taking out apparatus according to claim 1, wherein said priority determining means evaluates the result of detection of the partial features using a matching index representing a degree of matching of a partial image of the object and the corresponding partial feature in the partial feature detecting region, and significance of the partial feature detecting region with respect to the whole feature of the object, and determines the priority of taking out the object based on the sum of products of the matching indexes and the significance of the partial features.